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REM III PROGRAM

REMEDIAL PLANNING ACTIVITIES AT SELECTED UNCONTROLLED HAZARDOUS SUBSTANCE DISPOSAL SITES WITHIN EPA REGIONS I-IV

AR301472

EPA CONTRACT 68-01-7250

EBASCO SERVICES INCORPORATED

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FINAL EVALUATION REPORT

REVIEW OF RESPONSIBLE PARTIES' REVISED RI/FS WORK PLAN

OLD CITY OF YORK LANDFILL SITE SEVEN VALLEYS, PENNSYLVANIA

MAY 26, 1987

W. A. NO. 29-34B4.0

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EBASCO SERVICES INCORPORATED

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May 26, 1987
RM/3/87-111

Ms. Patricia Tan
CERCLA Enforcement Section
U.S. Environmental Protection Agency
Region III
841 Chestnut Street
Philadelphia, PA 19107

Subject: REM III Program - EPA Contract No. 68-01-7250
Work Assignment No. 29-34B4
Old City of York Landfill Site
Seven Valleys, Pennsylvania
FINAL REPORT - EVALUATION OF RESPONSIBLE PARTIES' REVISED RI/FS WORK PLAN

Dear Ms. Tan:

The REM III Team is pleased to present this final report, which documents the review and evaluation of the responsible parties' (RP's) Revised RI/FS Work Plan. The objective of this evaluation is to determine whether the RPs adequately addressed EPA and REM III comments on the Draft RI/FS Work Plan, dated March 1986. This report documents the adequacy of the RP's responses.

The REM III Team's evaluation found that, for the most part, the revised work plan has incorporated EPA and REM III Team comments, including those pertaining to the geophysics investigation and the soil gas survey, which were previously noted as the most significant technical deficiencies of the Draft Work Plan. REM III comments on the scoping approach (i.e., RI/FS phasing approach) were not adequately addressed by the RPs. It appears that there is still some confusion on where the preliminary risk assessment, identification of ARARs, and identification of preliminary remedial technologies takes place during the remedial investigation/feasibility study process. Section 4.0 of this report addresses this issue further.

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A review meeting to discuss this evaluation will be conducted at your request. Please feel free to contact me or our Site Manager, Mr. Raymond Wattras at (412) 788-1080 to discuss our evaluation of the Revised RI/FS Work Plan.

Very truly yours,

Richard C. Evans, P.E.
Regional Manager, Region III

RCE/RPW/md

cc: Mr. E. Shoener - EPA, Region III
Mr. G. Crystall - EPA, Region III
Dr. M.K. Yates - ZPMO
Dr. M. Amdurer - ZPMO
Mr. A.K. Bomberger - NUS
Mr. R.P. Wattras - NUS

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MAY 26, 1987

FINAL EVALUATION REPORT
REVIEW OF REVISED RI/FS WORK PLAN

OLD CITY OF YORK LANDFILL SITE
SEVEN VALLEYS, PENNSYLVANIA

EPA WORK ASSIGNMENT NUMBER 29-34B4.0
UNDER
CONTRACT NUMBER 68-01-7250

PREPARED BY:
NUS CORPORATION
PITTSBURGH, PENNSYLVANIA

APPROVED BY:
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PREPARED BY:

Raymond P. Wattras

RAYMOND P WATTRAS
SITE MANAGER
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REGIONAL MANAGER, REGION III
EBASCO SERVICES INCORPORATED

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1.0 INTRODUCTION

The review and evaluation of the RI/FS Work Plan, prepared by Groundwater Technology, Inc., (GTI) for the responsible parties, were conducted in accordance with Task 1 (Activity 2) of the Final Work Plan for review of RI/FS documents, dated August 5, 1986. The REM III team has reviewed background information prior to evaluating the RI/FS Work Plan to determine whether the scope of work and technical approach satisfies the requirements for conducting a remedial investigation and feasibility study, as set forth by the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) (40 CFR 300.68) November 20, 1985, and SARA.

Available information pertaining to the Old City of York Landfill Site was obtained from EPA files shortly after the initiation of this Work Assignment in May 1986. This information consisted of reports, letters, and memos from the EPA, the Pennsylvania Department of Environmental Resources (PADER), and the responsible parties.

To develop an understanding of the site history as well as its physical and chemical characteristics, the following documents were reviewed prior to evaluating the RI/FS Work Plan:

- Hazard Ranking System Model of Old City of York Landfill, September 29, 1982, prepared by Ecology and Environment, Inc., for EPA.
- Site Inspection Report of Old City of York Landfill, November 9, 1982, prepared by Ecology and Environment, Inc., for EPA.
- Final Toxicological Review of Old City of York Landfill, July 1, 1983, prepared by NUS Corporation for EPA.
- Site Inspection of Old City of York Landfill, November 28, 1983, prepared by NUS Corporation for EPA.
- Environment Assessment of The City of York Landfill, February 27, 1984, prepared by Groundwater Technology, Inc., for City of York.

Additionally, a site visit was conducted by the REM III Site Manager and Hydrogeologist on October 15, 1986, to make visual observations of the site in order to familiarize the REM III Team with the site layout and surroundings.

This Final Evaluation Report also focused on whether the RPs have adequately addressed REM III/EPA comments on the Draft RI/FS Work Plan, dated March 1987. Section 2.0 of this evaluation report briefly describes the Old City of York Landfill Site with respect to the site setting, site characteristics, and the present status of the site. Comments

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generated by the REM III Team on the Draft RI/FS Work Plan are provided in Section 3.0. Section 3.0 also documents the adequacy of the RPs' response to the previously submitted comments. Conclusions and recommendations are given in Section 4.0. The RPs' Revised RI/FS Work Plan depicted the following format:

Section 1: Introduction
Section 2: Site Background
Section 3: Chronology of Previous Work
Section 4: Project Planning and Management
Section 5: Remedial Investigation
Section 6: Sampling Plan
Section 7: Endangerment Assessment
Section 8: Feasibility Study

In addition to reviewing the text of the work plan, the REM III Team evaluated the following appendices:

Appendix 1: Data Management
Appendix 2: Health and Safety Program
Appendix 3: Site Survey and Establishing the Reference Grid
Appendix 4: Initial Walking Reconnaissance
Appendix 5: Geophysical Survey
Appendix 6: Soil Gas and Ambient Air Investigation
Appendix 7: Soil Investigation and Sampling
Appendix 8: Stream and Spring/Seep Sampling
Appendix 9: Groundwater Investigation
Appendix 10: Biota Investigation
Appendix 11: Laboratory Methods
Appendix 12: Tablated Water Analyses

2.0 SITE DESCRIPTION AND STATUS

The Old City of York Landfill Site is located near the town of Seven Valleys in York County, Pennsylvania. The landfill was used by the City of York from 1961 until January 1975 for the disposal of residential, commercial and industrial waste materials. The 180-acre landfill was never granted a permit. In December 1978, the City of York sold the entire tract of land to Dr. Roger Boser.

The landfill is bounded on the east by South Road and on the west by the South Branch of Codorus Creek. A predominantly rural section of Springfield Township borders the landfill to the north and south.

The Pennsylvania Department of Environmental Resources (PADER) initiated an investigation of the landfill during July 1981 in response to a complaint by a local resident concerning the taste and odors of their drinking water. Residential wells in the vicinity of the landfill were subsequently sampled and found to be contaminated with volatile organic pollutants. Based upon these findings, PADER advised five landowners against using

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their residential wells for drinking and cooking purposes (NUS, 1983).

PADER informed the City of York that the agency believed the residential wells had been contaminated by pollutants emanating from the landfill. The state issued an order to the City of York to define the extent of the contamination problem and study remedial options. On November 16, 1982, the City of York and PADER entered into a Consent Order which obligated the City of York to assess the extent of contamination and recommend remedial actions. An independent firm, Groundwater Technology, Inc., was contracted by the City of York to comply with the Consent Order. Bottled water was also provided to residents whose wells had been contaminated (City of York, 1984).

Groundwater Technology collected water samples from various residential wells near the site and from four monitoring wells that were installed on site. Well No. 1 was constructed in what appeared to be an upgradient location near South Road and the Glatfelter residence. Well No. 2 was located in the middle of the landfill to gain insight on the water quality directly beneath the site. This well is also located near the Boser residential well, which was found to be consistently higher in contaminant levels than the other residential wells. Well No. 3 was positioned in the vicinity of a suspected geologic fracture near the northwest border of the site. Well No. 4 was constructed near the South Branch of Codorus Creek to determine the extent of the contaminated plume in the direction of this creek. All four wells were constructed to a depth of approximately 150 feet, as influenced by the thickness of the aquifier. Groundwater samples collected from these wells indicated higher concentrations of organic contaminants in Well No. 2 when compared to the other three (Groundwater Technology, 1984).

Samples collected from nearby residential wells indicated the presence of organic contaminants, including tetrachloroethylene, trichloroethylene, 1,2-dichloroethylene, and various polynuclear aromatic hydrocarbons. The highest concentrations of organic compounds were detected around the Boser residential well. Total concentrations of contaminants ranged from 90 ug/l to 375 ug/l. Other residential wells, located farther away from the landfill, were less contaminated. Analysis of these wells indicated levels less than 40 ug/l (total organic contaminants) of contamination. Contaminant levels in samples collected from the four upgradient wells were found to be below the instrument detection limit (Groundwater Technology, 1984).

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Until recently, the Old City of York Landfill was a stat enforcement site, but has now been made into a Federal enforcement (lead) site. A Consent Order is being negotiated by EPA for a remedial investigation and feasibility study to be conducted by the responsible parties.

3.0 WORK PLAN EVALUATION

The initial REM III review, which was documented in the Draft Evaluation Report, focused on evaluating the RI/FS objectives in accordance with the requirements of the NCP, SARA, and EPA guidance documents for implementing an RI and FS under CERCLA. The RPs' Draft Work Plan was found to be deficient with respect to implementing the RI and FS "phasing approach" , which has been recommended in the latest EPA guidance. This includes the failure to perform a preliminary risk assessment, identify Applicable or Relevant and Appropriate Requirements (ARARs), identify preliminary remedial technologies for all affected media, and determine Data Quality Objectives. The RPs' Revised Work Plan discusses the phasing approach; however, the author states that the preliminary risk assessment and identification of ARARs will be conducted during the "site characterization" phase of the RI. This does not follow the latest EPA approach since the preliminary risk assessment and identification of ARARs should be performed during RI/FS scoping. It appears that the authors have failed to grasp this concept. Additionally, the Revised Work Plan indicates that the identification of preliminary remedial technologies will be performed following the RI. This should be performed during the RI/FS scoping phase so that appropriate data may be collected during the RI.

The REM III Draft Evaluation Report indicated that minor modifications to the geophysical study and soil gas survey should be incorporated into the RI/FS Work Plan in order to obtain appropriate information to assess remedial alternatives and health risks. The RPs' Revised Work Plan has adequately responded to REM III and EPA recommendations by 1) adding a magnetometer survey to better define the landfill boundary and to confirm the results of the electromagnetic survey, and 2) indicating that up to four soil borings will be drilled in the vicinity of any high soil gas measurement and obtain up to four soil samples for complete HSL analyses.

look into

see PADER notes

Comments that were identified in the REM III Draft Evaluation Report are given below. The adequacy of the RPs' response is also provided for each comment.

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Work Plan Reference	Comment	Response
Section 2.1	1) The statement regarding maximum concentration of volatile organics being less than 200 ppb is misleading to the reader. Health effects are determined by the type of individual compound and for certain types of compounds, 200 ppb may be harmful to the public health.	Addressed
Figure 1	2) Figure 1 does not provide any information with respect to site location. Does the Figure represent the county? Where is the site as described in the text? This figure provides no value to the reader.	Addressed
Table 1	3) Table 1 indicates "select wells". This needs to be clarified in the text.	Addressed
Section 2.2 Page 7	4) Current land use needs to be clarified. What does "old field" mean? What is the end use of the corn? Please expand this section (i.e.,planned use of site, etc.).	Addressed
Section 1.0 Page 1	5) The investigation should provide appropriate information to 1) characterize the extent and nature of contamination, 2) assess public health risks and environmental concerns, and 3) evaluate remedial alternatives. This should be clearly stated in the Work Plan.	Addressed
Section 3, Page 13	6) Clarify "surface" analyses (Paragraph 2). It is assumed that the work plan is referring to "surface water" samples.	Addressed
Section 3, Page 13 and Table 1	7) "Low concentrations" could result in a significant health risk for some compounds. Additionally, it would be helpful if a range of concentrations were given in table form for each contaminant detected onsite. The text refers to organic and inorganic compounds, but no mention is made to the specific type(s) of compounds. This information would be useful to the reader.	Addressed
Section 6, Page 48	8) With respect to identifying preliminary alternatives, new cleanup standards have been identified in SARA and should be discussed.	Addressed

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Work Plan Reference	Comment	Response
Section 3, Page 14	9) Please clarify what is meant by "treating the groundwater having the highest concentration of contaminants". Action limits for protecting the public health and environment should be the criteria for groundwater treatment.	Not Applicable. See Section 4.0 for justification
Section 3.1	10) Identify QA/QC protocols for the subject parameters.	Addressed
Section 3.1	11) Identify to what level the groundwater will be treated. Will air monitoring be performed in conjunction with the air-stripping operation?	Addressed
Section 4.3, Page 19	12) EPA does not certify laboratories ("EPA certified laboratories") for hazardous waste analysis. No mention is made regarding the validation of the data. Who will validate it? Were the previous analytical analyses validated? Proof of validation should be provided if it is to be used as part of the decision making process.	Addressed
Section 4.4	13) The health and safety plan should also adhere to the requirements of 29 CFR 1910.120 (12/16/86). (OSHA's Interim Final Rule for Hazardous Waste Operations and Emergency Response.)	Addressed
Figure 4	14) Following the field investigations, 5 weeks may not be adequate time to prepare a report since the analyses may not be available or validated within this time frame.	Addressed
Section 5	15) Section 5, Site Characterization, discusses previous investigations and their findings. However, Section 2 (Site Background) also discusses these same investigations and findings. It is recommended that the two sections can be combined to avoid confusion. EPA guidance recommends that the site background and the characterization of the site be presented together.	Addressed

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Work Plan Reference	Comment	Response
Section 5.2.3	16) State the objectives of the electromagnetic conductivity and the resistivity survey. In order to evaluate the resistivity method, the following information should be included: location of the soundings; number of soundings to be completed; the electrode configuration to be utilized; electrode spacing to be utilized; and specific techniques to reduce and interpret the field data.	Addressed
Section 5.2.3 Page 41	17) The resistivity technique may not provide the necessary resolution to accurately map the depth to bedrock. A shallow seismic refraction survey completed in areas free of landfill wastes (based on the results of the EM and magnetometer surveys) will provide better bedrock depth resolution but with slightly increased costs..	Addressed
Section 5.2.3 Page 40	18) The effectiveness of placing the EM grid on 250-foot centers is questionable. The quality of data, in addition to the interpretation of the data, may be subject to error because of the distance between centers. Please address this and provide the dipole configurations and spacings to be used.	Addressed
Section 5.2.3 Page 40	19) The use of EM34-4 profiling to delineate landfill boundaries should be used in conjunction with a magnetometer survey. Although the electromagnetic survey has the capabilities of locating buried metallic objects (i.e. drums), its primary function is to assess hydrogeologic conditions. The magnetometer, if used in conjunction with the EM-34, will confirm geologic structures (i.e., bedrock) and will identify the presence of buried metallic objects. When interpreted together, these techniques will more accurately delineate the landfill boundaries.	Addressed
Section 6 Task 1 Page 46	20) Identify the criteria and methodology for screening preliminary remedial technologies. This is not explained in the work plan. EPA guidance suggests that preliminary remedial technologies be identified during the preparation of the work plan. The FS outline does not suggest this.	Addressed

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Work Plan Reference	Comment	Response
Section 6	21) The implication of SARA, specifically Section 121 (Cleanup Standards) should be discussed in this section of the work plan. Additionally, treatability studies should be considered for possible excavation and treatment of contaminated soils.	Not Addressed See Section 4
Section 1.4.2 (Appendix 1)	22) It should be stated that one set of trip blanks will accompany each shipping container.	Addressed
Section 1.4.1 (Appendix 1)	23) The site log book should document the explanation for any sample not collected, or any deviation from the sampling plan or work plan.	Addressed
Section 1.7 (Appendix 1)	24) The data reviewer and validator should be a chemist, not associated with the analyzing laboratory. EPA methodologies should be used when validating the data.	Addressed
Section 5.1.4 (Appendix 2)	25) Provide information regarding the placement, location, and storage of the drummed material. How will it be stored so that is does not present a potential health risk (i.e., children)?	Addressed
General, Appendix 6	26) Soil gas and air investigation results should also be reviewed and validated by a qualified chemist who is not associated with the analytical work. The work plan should specify that blanks will be taken.	Addressed
General, Appendix 6	27) A percentage of the negative samples should be analyzed by GC/MS methods to confirm the results and reliability of the field GC. Additionally, this would provide data to assess surface soil characteristics. It is also suggested that samples exhibiting the highest readings be analyzed for HSL contaminants in order to assess public and environmental health risks (i.e. dermal contact).	Addressed
Appendix 7 Page 9	28) Soil obtained for volatile organic analysis should be placed directly into the sample containers. The remaining soils should be placed into a glass bowl and mixed prior to placing it in its appropriate sample container. This also applies to the collection of sediment samples, which is described in Appendix 8 of the RI/FS Work Plan.	Addressed

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4.0 CONCLUSIONS AND RECOMMENDATIONS

Twenty-eight comments were generated during the review of the Draft Work Plan by EPA and the REM III Team. The revised Work Plan adequately addresses 26 of these comments. Comment Number 9 has been deleted following the review meeting with EPA and the RPs. Comment Number 21, which focuses on the implications of SARA, was not adequately addressed by the RPs.

It is recommended that the RPs' Final RI/FS Work Plan include a thorough discussion of the key issues of SARA (Section 121 - Cleanup Standards). The Final Work Plan should indicate that remedial alternatives utilize permanent solutions and alternative treatment technologies or resource recovery technologies. The treatment technologies should result in a permanent and significant decrease in the toxicity, mobility, or volume of the hazardous substance or contaminant. The long-term effectiveness of various actions should focus on:

- Long term uncertainties of land disposal.
- Goals and requirements of the Solid Waste Disposal Act.
- Persistence, toxicity, mobility, and bioaccumulation.
- Short and long-term potential for adverse human health effects.
- Long-term maintenance costs.
- Potential for future remedial action costs if the remedy fails.
- Potential threat to human health and the environment from the excavation, transportation, and redisposal, or containment of hazardous substances or pollutants or contaminants.

As previously mentioned in Section 3.0, the RI/FS scoping process did not appear to be well understood by the work plan authors. This is evidenced by the discussion of the preliminary risk assessment, ARAR determination, and preliminary identification of remedial technologies. The revised work plan indicates that these activities will be conducted during the "Site Characterization" Phase of the RI. As shown on the attached figure, these activities should have been performed during the scoping of the RI/FS. This would provide the framework for developing the RI/FS Work Plan. As a result, the Revised Work Plan may be deficient with respect to collecting the appropriate quantity and quality of data. It is recommended that cleanup action levels be established for groundwater, surface water, and soils. The analytical detection limits

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should be as close as possible to the action levels in order to assess health risks and evaluate remedial technologies.

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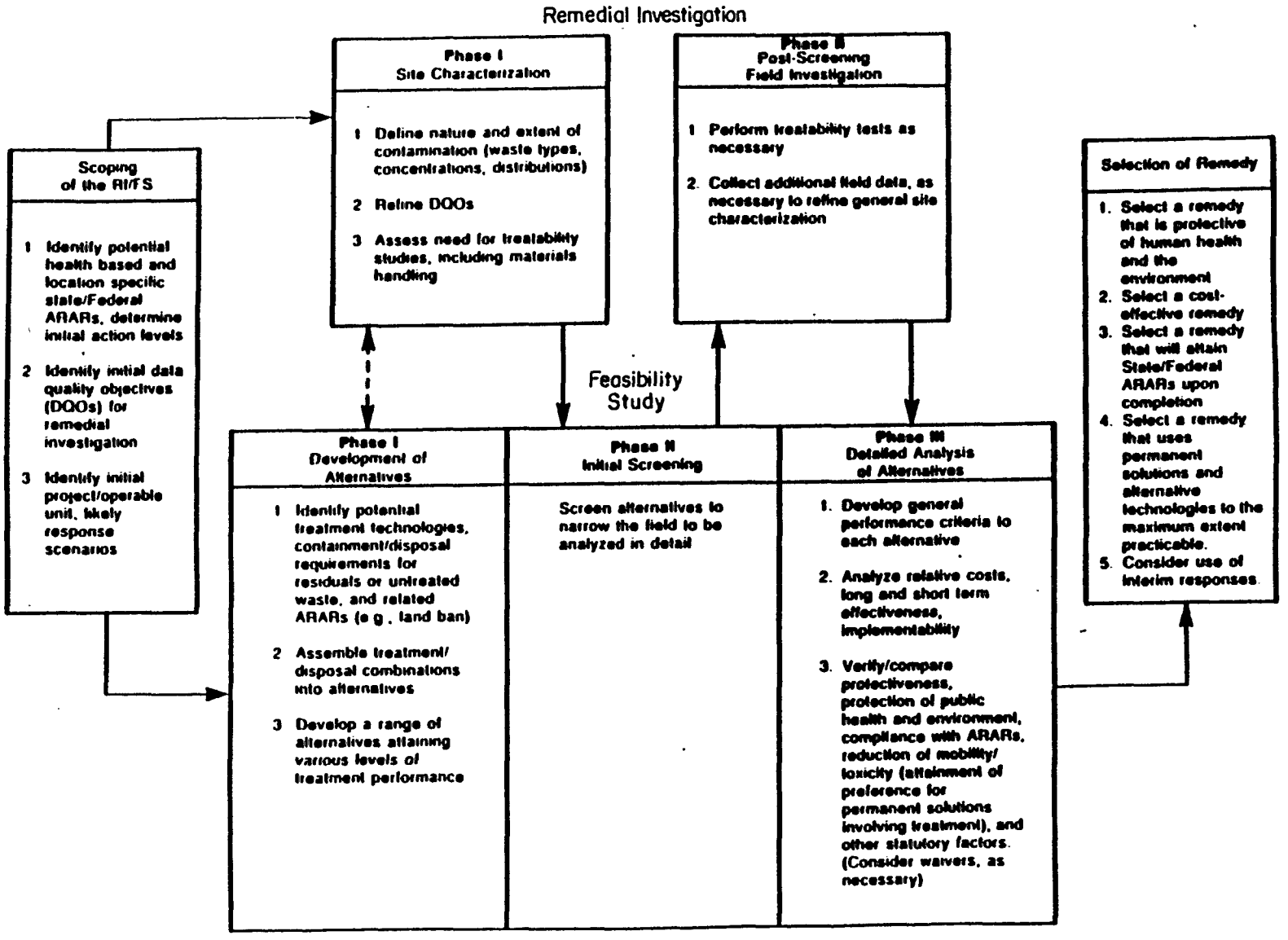

FIGURE 1

PROPOSED REMEDY SELECTION PROCESS UNDER REAUTHORIZATION

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